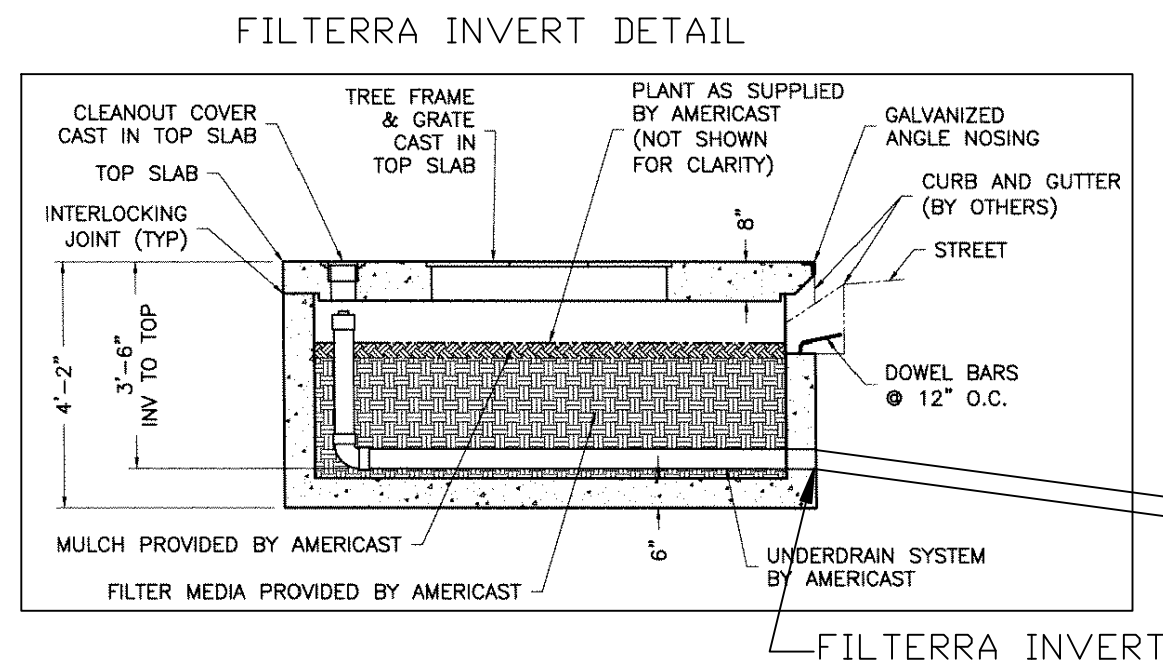
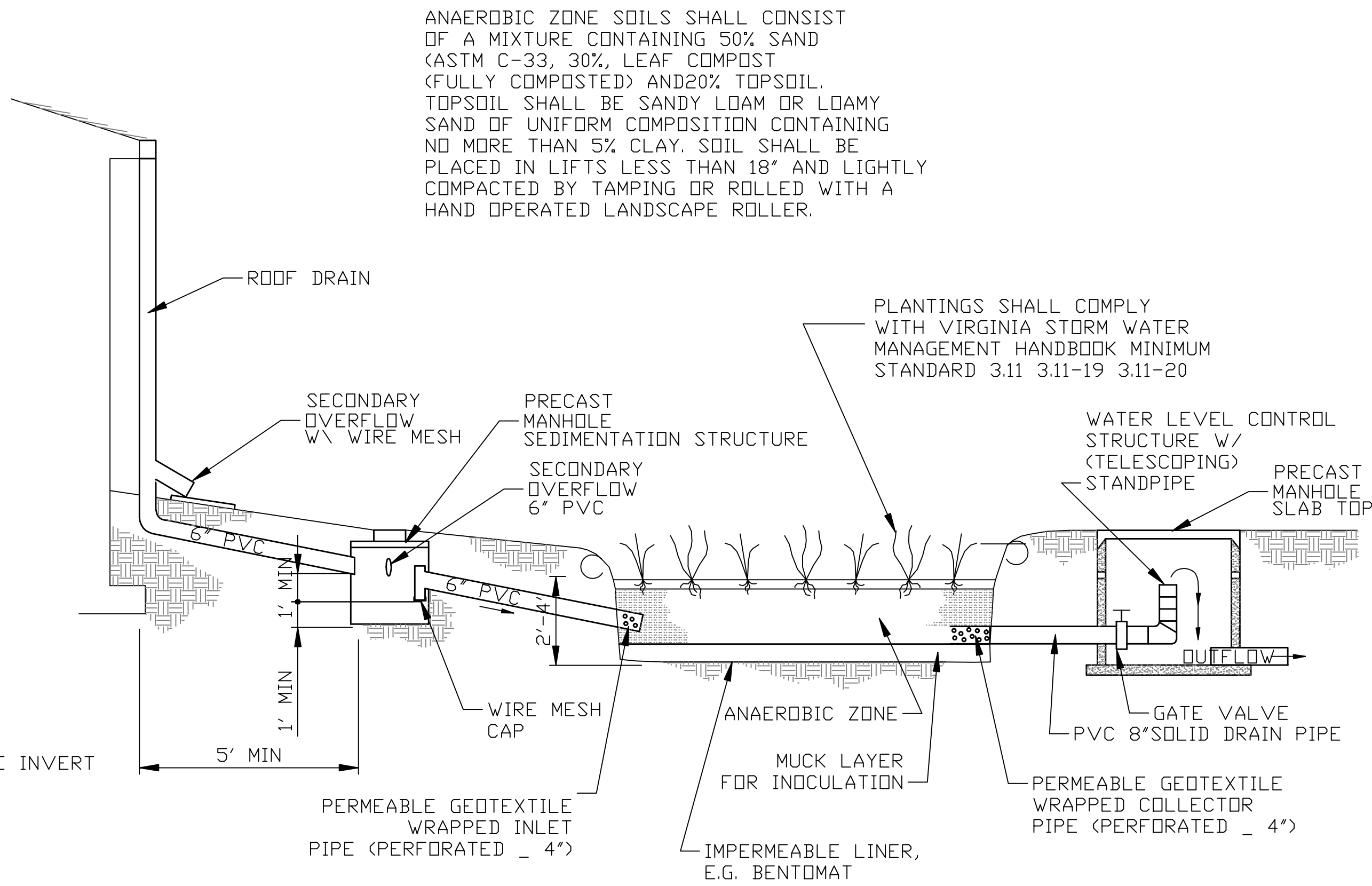
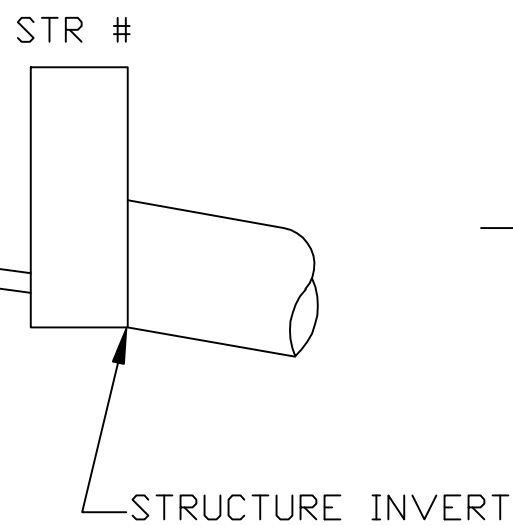


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FILTERRA SCHEDULE		
STR #	SIZE	AREA
A	4'X6'	0.14 AC
B	4'X6'	0.12 AC
C	6'X8'	0.32 AC



FILTERRA INVERT SCHEDULE			
FILTERRA #	FILTERRA INVERT	STR #	STR INVERT
A	529.76	A	525.70
B	530.71	B	526.33
C	527.72	12A	526.01



UPFLOW INLET FOR
BIORETENTION BASIN (DETAIL)
SEE UTILITY PLAN FOR PLAN VIEW & INVERTS

SCALE: NTS

MAINTENANCE NOTES

PLANTING SOIL

- URBAN PLANT COMMUNITIES TEND TO BECOME VERY ACIDIC DUE TO PRECIPITATION AS WELL AS THE INFLUENCES OF STORM WATER RUNOFF. FOR THIS REASON, IT IS RECOMMENDED THAT THE APPLICATION OF ALKALINE, SUCH AS LIMESTONE, BE CONSIDERED ONCE TO TWICE A YEAR. TESTING OF THE pH OF THE ORGANIC LAYER AND SOIL, SHOULD PRECEDE THE LIMESTONE APPLICATION TO DETERMINE THE AMOUNT OF LIMESTONE REQUIRED.
- SOIL TESTING SHOULD BE CONDUCTED ANNUALLY SO THAT THE ACCUMULATION OF TOXINS AND HEAVY METALS CAN BE DETECTED OR PREVENTED. OVER A PERIOD OF TIME, HEAVY METALS AND OTHER TOXIC SUBSTANCES WILL TEND TO ACCUMULATE IN THE SOIL AND THE PLANTS. DATA FROM OTHER ENVIRONS SUCH AS FOREST BUFFERS AND GRASS SWALES SUGGEST ACCUMULATION OF TOXINS AND HEAVY METALS WITHIN FIVE YEARS OF INSTALLATION. HOWEVER, THERE IS NO METHODOLOGY TO ESTIMATE THE LEVEL OF TOXIC MATERIALS IN THE BIORETENTION AREAS SINCE RUNOFF, SOIL, AND PLANT CHARACTERISTICS WILL VARY FROM SITE TO SITE.
- AS THE TOXIC SUBSTANCES ACCUMULATE, THE PLANT BIOLOGIC FUNCTIONS MAY BECOME IMPAIRED, AND THE PLANT MAY EXPERIENCE DWARFED GROWTH FOLLOWED BY MORTALITY. THE BIOTA WITHIN THE SOIL CAN ALSO BECOME VOID AND THE NATURAL SOIL CHEMISTRY MAY BE ALTERED. THE PREVENTATIVE MEASURES WOULD INCLUDE THE REMOVAL OF THE CONTAMINATED SOIL. IN SOME CASES, REMOVAL AND DISPOSAL OF THE ENTIRE SOIL BASE AS WELL AS THE PLANT MATERIAL MAY BE REQUIRED.

MULCH

- BIORETENTION AREAS SHOULD BE MULCHED ONCE THE PLANTING OF TREES AND SHRUBS HAS OCCURRED. ANY GROUND COVER SPECIFIED AS PLUGS MAY BE INSTALLED ONCE THE AREA HAS BEEN MULCHED. GROUND COVER ESTABLISHED BY SEEDING AND/OR CONSISTING OF GRASS SHOULD NOT BE COVERED WITH MULCH.

PLANT MATERIALS

- AN IMPORTANT ASPECT OF LANDSCAPE ARCHITECTURE IS TO DESIGN AREAS THAT REQUIRE LITTLE MAINTENANCE. CERTAIN PLANT SPECIES INVOLVE MAINTENANCE PROBLEMS DUE TO DROPPING OF FRUIT OR OTHER PORTIONS OF THE PLANT. ANOTHER PROBLEM INCLUDES PLANTS, PRIMARILY TREES, THAT ARE SUSCEPTIBLE TO WINDTHROW, WHICH CREATES A POTENTIAL HAZARD TO PEOPLE AND PROPERTY (PARKED CARS). AS A RESULT, SOME PLANT SPECIES WILL BE LIMITED TO USE IN LOW-TRAFFIC AREAS.
- ONGOING MONITORING AND MAINTENANCE IS VITAL TO THE OVERALL SUCCESS OF BIORETENTION AREAS. ANNUAL MAINTENANCE WILL BE REQUIRED FOR PLANT MATERIAL, MULCH LAYER, AND SOIL LAYER. A MAINTENANCE SCHEDULE SHOULD INCLUDE ALL OF THE MAIN CONSIDERATIONS DISCUSSED BELOW. THE MAINTENANCE SCHEDULE USUALLY INCLUDES MAINTENANCE AS PART OF THE CONSTRUCTION PHASE OF THE PROJECT AND FOR LIFE OF THE DESIGN.
- MAINTENANCE REQUIREMENTS WILL VARY DEPENDING ON THE IMPORTANCE OF AESTHETICS. SOIL AND MULCH LAYER MAINTENANCE WILL BE MOST LIKELY LIMITED TO CORRECTING AREAS OF EROSION. REPLACEMENT OF MULCH LAYERS MAY BE NECESSARY EVERY TWO TO THREE YEARS. MULCH SHOULD BE REPLACED IN THE SPRING. WHEN THE MULCH LAYER IS REPLACED, THE PERVIOUS LAYER SHOULD BE REMOVED FIRST. PLANT MATERIAL UPKEEP WILL INCLUDE ADDRESSING PROBLEMS ASSOCIATED WITH DISEASE OR INSECT INFESTATIONS, REPLACING DEAD PLANT MATERIAL, AND ANY NECESSARY PRUNING.

CONTROL OF SEDIMENTS ON THE DRAINAGE SHED

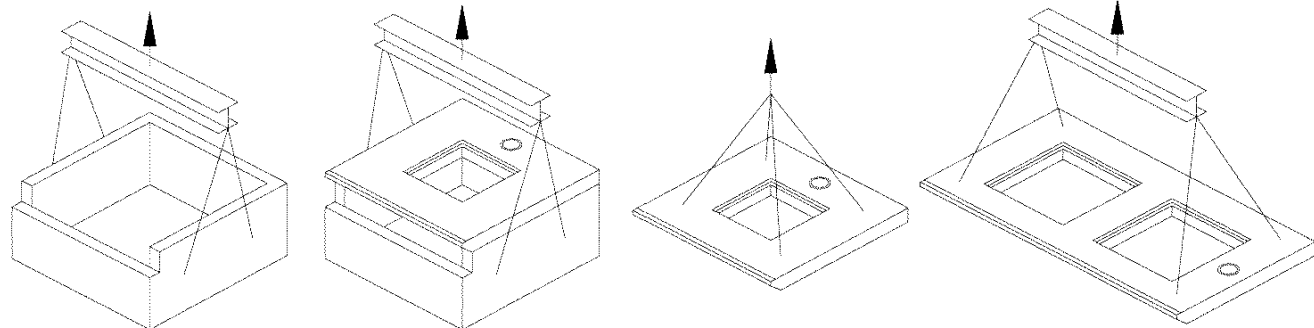
- CARE MUST BE TAKEN TO PROTECT THE BIORETENTION FILTER FROM EXCESSIVE SEDIMENTS FROM THE DRAINAGE SHED. WHENEVER ADDITIONAL LAND DISTURBING ACTIVITY TAKES PLACE IN THE AREA DRAINING TO THE BASIN, EFFECTIVE EROSION AND SEDIMENT CONTROL MEASURES MUST FIRST BE PUT IN PLACE TO EXCLUDE SEDIMENTS FROM THE BASIN. WHEN SAND OR OTHER STREET ABRASIVES ARE USED DURING THE SNOW OR ICING CONDITIONS TO PROVIDE TRACTION ON ROADWAYS OR PARKING LOTS DRAINING TO BIORETENTION BASINS, THE PAVEMENT SHOULD BE POWER/VACUUM SWEEP AS SOON AS FREEZING WEATHER ABATES TO PREVENT DAMAGE TO THE BASINS. FURTHER ALL EROSION AND SEDIMENT CONTROL MEASURES MUST REMAIN IN PLACE PROTECTING THE ENTIRE STRUCTURE UNTIL THE CONTRIBUTING DRAINAGE AREA IS STABILIZED.

MAINTENANCE SCHEDULE FOR BIORETENTION FILTERS

DESCRIPTION	METHOD	FREQUENCY	TIME OF THE YEAR
SOIL			
INSPECT AND REPAIR EROSION	VISUAL	MONTHLY	MONTHLY
ORGANIC LAYER			
REMULCH ANY VOID AREAS	BY HAND	WHENEVER NEEDED	WHENEVER NEEDED
REMOVE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER (OPTIONAL)	BY HAND	ONCE EVERY TWO TO THREE YEARS	SPRING
ANY ADDITIONAL MULCH ADDED (OPTIONAL)	BY HAND	ONCE A YEAR	SPRING
PLANTS			
REMOVAL AND REPLACEMENT OF ALL DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT	SEE PLANTING SPECIFICATIONS	TWICE A YEAR	3/15 TO 4/30 AND 10/1 TO 11/30
TREAT ALL DISEASED TREES AND SHRUBS	MECHANICAL OR BY HAND	N/A	VAIRES, DEPENDS ON INSECT OR DISEASE INFESTATION
WATERING OF PLANT MATERIAL SHALL TAKE PLACE AT THE END OF EACH DAY FOR FOURTEEN CONSECUTIVE DAYS AFTER PLANTING HAS BEEN COMPLETED	BY HAND	IMMEDIATELY AFTER COMPLETION OF PROJECT	N/A
REPLACE STAKES AFTER ONE YEAR	BY HAND	ONCE A YEAR	ONLY REMOVE STAKES IN THE SPRING
REPLACE ANY DEFICIENT STAKES OR WIRES	BY HAND	N/A	WHENEVER NEEDED
CHECK FOR ACCUMULATED SEDIMENTS	VISUAL	MONTHLY	MONTHLY

Americast Filterra® Weights and Lifting Details

		Box Only		Top Only		Box + Top		Box + Media		Box + Media + Top		*Spreader Bar	
		Pounds	Tons	Pounds	Tons	Pounds	Tons	Pounds	Tons	Pounds	Tons	Min	Max
4'-0" Throat	4x6	7,440	3.72	2,819	1.41	10,259	5.13	12,624	6.31	15,443	7.72	5.00 ft	7.50 ft
	4x8	9,145	4.57	3,829	1.91	12,974	6.49	16,057	8.03	19,886	9.94	5.00 ft	7.50 ft
6'-0" Throat	6x4	7,285	3.64	2,797	1.40	10,082	5.04	12,469	6.23	15,266	7.63	5.50 ft	7.50 ft
	Std 6x6	9,300	4.65	4,221	2.11	13,521	6.76	17,076	8.54	21,297	10.65	7.00 ft	9.00 ft
	6x8	11,315	5.66	5,121	2.56	16,436	8.22	21,683	10.84	26,804	13.40	7.00 ft	9.00 ft
	6x10	13,330	6.67	6,545	3.27	19,875	9.94	26,290	13.15	32,838	16.42	7.00 ft	9.00 ft
8'-0" Throat	8x4	8,835	4.42	3,787	1.89	12,622	6.31	15,747	7.87	19,534	9.77	5.50 ft	7.50 ft
	8x6	11,160	5.58	5,100	2.55	16,260	8.13	21,528	10.76	26,628	13.31	7.50 ft	9.50 ft
10'-0" Throat	10x6	13,020	6.51	6,503	3.25	19,523	9.76	25,980	12.99	32,483	16.24	7.50 ft	9.50 ft
12'-0" Throat	12x6	14,880	7.44	6,762	3.38	21,642	10.82	30,432	15.22	37,194	18.60	7.50 ft	9.50 ft



A 7.50 ft spreader bar is suitable for all sizes shown and is **always needed** for safe lifting of all box sizes

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1/3/05



HUGHES GROUP ARCHITECTS

45640 WILLOW POND PLAZA
STERLING, VIRGINIA 20164
703.437.6600

CIVIL:

ALPHA CORPORATION
21351 Ridgeway Circle, Suite 200
Dulles, Va 20166
(703) 450-0800

STRUCTURAL:

EHLERT-BRYAN
1451 Doleys Madison Blvd, Suite 220
Madison, VA 22101
(703) 827-9552

MECHANICAL/ELECTRICAL:

BRINJAC ENGINEERING
4000 Albemarle Street, NW
Washington, DC 20016
(202) 827-2750

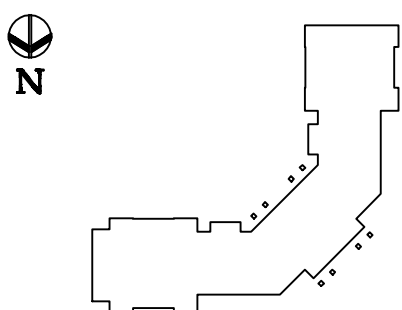


PURCELLVILLE FIRE AND RESCUE

500 NORTH MAPLE AVENUE
PURCELLVILLE, VIRGINIA

SWM & BMP DETAILS

KEY PLAN



REVISIONS:

ISSUES:
09-26-07 BID SET

STAMP AND SEAL:

DATE: 09-26-07 SCALE: AS NOTED

PROJECT NO. 0611

SHEET: C-125